Paper No.15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte HORST GETSCHMANN

Appeal No.1999-2819
Application No.08/631,952

ON BRIEF

Before URYNOWICZ, JERRY SMITH, and FLEMING, Administrative Patent Judges.

URYNOWICZ, Administrative Patent Judge.

Decision on Appeal

This appeal is from the final rejection of claims 1-16, all the claims pending in the application.

The invention pertains to a rotor assembly. Claims 1 and 14 are illustrative and read as follows:

> 1. A rotor assembly for a dynamoelectric machine comprising:
>
> a shaft including an outer circumferential surface portion having a circular cross section defining a shaft diameter; and
>
> a plurality of laminations, each lamination having a central opening receiving said shaft, said central opening defining an inner periphery including a plurality of radially inwardly extending compressible protrusions defining an inner diameter

slightly smaller than said shaft diameter, said protrusions being compressed onto said outer circumferential surface portion of said shaft to form a press fit between said lamination and said shaft.

14. A method of assembling a rotor assembly for a dynamoelectric machine comprising the steps of:

forming a shaft including an outer circumference portion having a circular cross section defining a shaft diameter;

forming a plurality of laminations, each lamination having a central opening defining an inner periphery, the inner periphery including a plurality of radially inwardly extending compressible protrusions defining a diameter slightly smaller than said shaft diameter;

inserting said shaft into said central openings of said laminations; and

compressing said protrusions against said outer circumferential surface portion of said shaft to form a press fit between said laminations and said shaft.

The references relied upon by the examiner as evidence of obviousness are:

Field II (Field)	4,423,343	Dec. 27, 1983
Nilsson	4,423,345	Dec. 27, 1983
Iseman et al. (Iseman)	5,218,252	Jun. 08, 1993
Neuenschwander	5,349,741	Sep. 27, 1994
Bosch	FR 2,247,004	May 02, 1975

Claims 1, 2, 4, 6 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Field in view of Bosch.

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Field and Bosch, further in view of Iseman.

Claims 5 and 8-15 are rejected under 35 U.S.C. §

103(a) over Field and Bosch, further in view of Neuenschwander.

Claim 16 is rejected under 35 U.S.C. § 103(a) over Field, Bosch and Neuenschwander, further in view of Nilsson.

The respective positions of the examiner and the appellant with regard to the propriety of these rejections are set forth in the examiner's answer (Paper No. 14) and the appellant's brief (Paper No. 12).

Appellant's Invention

Appellant's invention is adequately described at pages 2 and 3 of the brief. As is evident from the independent claims, the invention involves compressible protrusions on the central opening of rotor laminations to form a press fit between the laminations and a rotor shaft.

Opinion

With respect to the rejection of claims 1, 2, 4, 6 and 7, appellant first argues that there is no suggestion or motivation in the references or in the knowledge generally available to one of ordinary skill in the art to modify the synchronous motor system of Field with the drive motor stator laminations of Bosch to meet the claimed invention. Appellant states that Field discloses the conventional prior art structure of providing a key connection between a rotor shaft and a rotor lamination

and that the Bosch reference relates solely to a structure for supporting a motor within a hollow casing and is completely unrelated to the claimed structure of mounting rotor laminations on a rotor shaft. The argument is made that a person of ordinary skill in the art would not consider the teachings of Bosch to be relevant to the problem of solving the expense and distortion issues related to the prior art keyed or splined rotor shafts.

Appellant further argues that all claim limitations are not taught in the applied references. The position is taken that there is no mention in Field or Bosch of a plurality of laminations, each lamination having a central opening defining an inner periphery including a plurality of radially inwardly extending compressible protrusions defining an inner diameter slightly smaller than a shaft diameter.

The examiner explains that Bosch and Field both involve the use of laminated cores in dynamoelectric machines, and that a person skilled in that art would have known that laminated cores in dynamoelectric machines are mounted on the inner surface of a casing via projections on the laminated cores (Bosch), or are mounted or keyed on the outer surface of a shaft (Field).

With respect to appellant’s first argument, the examiner’s position is that it would have been obvious to construct the rotor of Field with the projections of

Bosch because Field suggests that the rotor laminations be mounted on the shaft by any known means and Bosch teaches projections to ensure a tight press fit between laminations and the laminations' support.

As to appellant's second argument, the examiner takes the position that it would have been obvious to a person skilled in the art at the time of the invention to construct the motor of Field with laminations having a central opening defining an inner periphery including a plurality of radially inwardly extending compressible protrusions defining a slightly smaller inner diameter than the diameter of the shaft because Bosch teaches compressible protrusions to provide a strong interference fit between laminations and the member to which the laminations are supported.

After consideration of the positions and arguments presented by both the examiner and the appellant, we have concluded that the rejection should not be sustained.

We agree with appellant that there is no motivation to combine the stator lamination teaching of Bosch to Field. The laminations of Bosch have protrusions on their outer periphery to fix the position of the laminations to outer casing 1. Application of this teaching to Field would have resulted in protrusions on the outer periphery of Field's laminations, i.e., 28, 30, 32 and 34, and there is simply no reason for doing this.

Even if there were motivation to combine the teachings of Field and Bosch, appellant is correct that all claim limitations are not taught in the references. There is no teaching in Bosch or Field to mount laminations on a shaft by providing the central opening of the laminations with compressible protrusions to form a press fit between the laminations and the shaft. Thus, all the limitations of the claims are not met even when the teachings of the references are combined.

Still further, the prior art provides no motivation for fixing the outer protrusions of Bosch on the inner periphery of the central opening of the laminations taught by Field. The mere fact that the prior art may be modified in this manner as indicated by the examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-1784 (Fed. Cir. 1992).

Whereas claims 3, 5 and 8-13 depend directly or indirectly from either independent claim 1 or independent claim 7, the rejection of these dependent claims will not be sustained.

Whereas independent claim 14, and claims 15 and 16 which depend therefrom, are directed to a method of assembling a rotor assembly comprising a plurality of laminations, each having a central opening defining an inner periphery including a plurality of radially

inwardly

extending compressible protrusions, the rejections of these claims will not be sustained.

REVERSED

STANLEY M. URYNOWICZ JR. Administrative Patent Judge	)
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